GREEN TIME, SCREEN TIME AND EMOTIONAL REGULATION AS PREDICTORS OF PSYCHOLOGICAL WELL-BEING AMONG UNIVERSITY STUDENTS

SYNOPSIS

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INTRODUCTION

Technological developments in recent decades have increased young people's engagement with screen-based technologies (screen time), which is adversely related to emotional regulations, and a reduction in young people's contact with nature (green time) has been observed concurrently. This combination of high screen time, low green time, and low emotional regulation or negative emotion regulation may affect mental health as well as psychological well-being. In general, high levels of screen time appeared to be associated with unfavourable psychological outcomes and emotion dysregulation, while green time appeared to be associated with favourable psychological outcomes and higher emotion regulation.

GREEN TIME

Green time refers to the amount of time university students spend in natural environments, such as parks, forests, or other green spaces. Researchers have shown that spending time in nature can have a positive impact on mental well-being, reducing stress and promoting relaxation. Physical activity is not only good for the body, but it's also great for the mind. Being active releases chemicals in our brain that make us feel good, boosting our self-esteem and helping us concentrate as well as sleep well and feel better. Being active doesn't have to mean taking out an expensive gym membership or running marathons. It can also be a great way to meet people, take a break from daily life, and gain confidence. Other benefits include: less tension, stress, and mental fatigue; a natural energy boost; a sense of achievement; more focus and motivation; feeling less angry or frustrated; a healthy appetite; and having fun. Being in nature can make us feel happier, make our lives more worthwhile, and reduce our levels of depression and anxiety. Nature doesn't have to mean forests or national parks; either walking to a local common, visiting a friend's garden, or simply noticing trees and flowers planted by the roadside can boost mental well-being.

A research study conducted by **Cleary et al. (2019) e**xamined the associations between perceptions of the quantity of urban green space and psychological well-being. Linear regression revealed that perceptions of urban green space quantity were significantly and positively associated with psychological well-being.

Ghekiere et al. (2019) examined the role of trends in sleeping difficulties among European adolescents. The study examined changes in sleep-onset difficulties over time and associations with physical activity

and screen-time behaviours among adolescents. Multilevel logistic regression analyses were conducted to explore associations between regular sleeping difficulties, excessive screen time exposure, and being insufficiently physically active (i.e., < 60 min daily). The strength of the association between screen time and sleep-onset difficulties increased over time, which may reflect a change in type of screen time use (e.g., the increased use of easily accessible screens such as smartphones and tablets).

Gorji et al. (2021) examined the association of screen time and physical activity with health-related quality of life in Iranian children and adolescents. The aim of the study was to investigate the association between physical activity and screen time and their combination with health-related quality of life in a nationally representative sample of Iranian children and adolescents. Both physical activity and screen time are significantly and independently associated with health-related quality of life in Iranian children and adolescents. while the adverse effects of prolonged screen time could be diminished by high physical activity.

Xie et al. (2022) examined the role of "Will "green" parents have "green" children? The relationship between parents' and early adolescents' green consumption values. This study employed ecological socialization theory as a framework to investigate the process by which parents' green consumption values shape similar values in their young adolescents. These findings have implications for cultivating the green consumption values of today's youth. The results also have heuristic value for future research on the ecological socialization and inter-generational transmission of pro-environmental values.

SCREEN TIME The word screen time was first repurposed by Engelhardt in 1991 in an article about children's television and video games .Screen time refers to the amount of time university students spend using electronic devices like smartphones, computers, or tablets and particularly on social media or gaming Excessive screen time, is reported to be associated with negative effects on mental health, such as increased anxiety and decreased well-being .More screen time has been linked with shorter sleep duration, decreased sleep efficiency, and a longer sleep onset delay. When using any screen before bedtime, the blue light emitted disrupts the body's natural melatonin hormone production. Melatonin is produced by the brain's pineal gland and controls the body's internal clock. The clock is referred to as the body's circadian rhythm, and it is naturally responsive to light. Melatonin levels increase as the sun sets and remain in that increased state for the remainder of the night. As the sun rises, melatonin levels

start to drop. This hormone reduction is helping the body's natural rhythm wake up due to the bursts of natural sunlight. The light screens emit is in a similar spectrum to sunlight, but the blue light emission is what human circadian rhythms are most sensitive to. The blue wavelengths are closely correlated to those from sunlight, which is what helps the body keep in sync with the sunrise and sunset. Therefore, using any screen prior to bedtime disrupts the body's production of natural bedtime hormones, which can trick the brain into believing it is still daytime, making it harder to fall asleep. Increased use of screens in children has also been shown to have an association with adverse effects on the quality of sleep-in children. Many apps promise to improve sleep by filtering out blue light produced by media devices; there have been no large studies to assess whether such apps work. Some users' express dissatisfaction with the resultant orange tint of the screens. Some people use blue-blocking glasses for the purpose of attempting to block out blue light both from electronic media and from other artificial light sources. The American Academy of Paediatrics' recommends screen time for children be limited for multiple reasons, among them that "too much screen time can also harm the amount and quality of sleep.". As well as negatively impacting the adult sleep cycle, using screens can also affect one's physical health. Obesity is a common result of spending great amounts of time on screens like a television, video games, a smartphone, or a computer screen. If the amount of screen time adolescents spend is limited, the likelihood of obesity can be reduced. This sedentary behaviour is largely due to the nature of most electronic activities. Sitting to watch television, playing computer games, or surfing the Internet takes time away from physical activities, which leads to an increased risk of weight gain. It has been found that children (kindergarten and 1st graders) who watch 1-2 hours of television a day are more likely to be overweight or obese than children who watch less than one hour a day. Academic performance can be improved by screen time, depending on the length and content of the exposure. Too much screen time distracts students from studying.

It is important for parents to establish a limit on how much screen time their children can use per day. Limiting and monitoring adolescent screen usage can increase cognitive development. On the other hand, increased screen time has been associated with school assignments. It is yet to be proven that screen time can significantly enhance academic performance, but it is known that increased use of screen time distracts students from focusing on class assignments. More screen time generally leads to less time

spent in nature and, therefore, a weaker connection.

A research study conducted by **Lacy et al. (2012)** examined whether screen time and physical activity behaviours are associated with health-related quality of life in Australian adolescents. To explore the cross-sectional relationships between health-related quality of life, physical activity behaviours, and screen-based media use among a sample of Australian adolescents. Several of the relationships between low physical activity, high screen-based media use, and health-related quality of life were comparable to those previously observed between chronic disease conditions and health-related quality of life, indicating that these behaviours deserve substantial attention.

Stratman et al. (2016) examined the role of changes in green time and screen time related to psychological well-being in early adolescence. Psychological well-being influences health behaviours differently in adolescent boys and girls. Screen time was evaluated based on the daily time spent in front of television, video games, and computers. Those who had 4 hours or more of screen time per day were classified as exceeding the recommended time. Adolescence is crucial for the development of unhealthy behaviours related to psychological well-being status in the context of a middle-income country. Gender differences are important because poor psychological well-being seems to affect sedentary behaviours in girls more than in boys and predicts insufficient activity among boys.

Gaetan et al. (2017) examined the role of video games in adolescence and emotional functioning. The aim of the research is to understand video game play based on some dimensions of emotional functioning such as emotion regulation, emotion intensity, emotion expression, and alexithymia. The avatar's evolution in the virtual environment may help mediate adolescents' problematic emotional experiences to give them meaning and enable their appropriation. As such, video games may act as a medium for projecting and experiencing one's emotional life by staging the emotional self, thereby explaining the engagement of adolescents in video gaming. **Xu et al. (2019**) examined the relationship between physical activity, screen time, and sleep quantity and quality in US adolescents aged 16–19. Respondents who met the physical activity recommendation had 50% lower odds of having sufficient sleep (≥8 h) than those not meeting the recommendation. Respondents who met the screen time recommendation (≤2 h/day) had 55% lower odds of reporting poor sleep quality than those whose screen time exceeded the recommendation, with similar patterns observed for females and males. However, males who met both

physical activity and screen time recommendations had 73% lower odds of reporting poor sleep quality than males who met neither. In conclusion, physical activity and screen time are associated with sleep quantity or sleep quality in adolescents, and there are differences in these associations by sex.

Zsido et al. (2021) examined the role of maladaptive cognitive emotion regulation strategies and social anxiety in problematic smartphone and social media use. The aim of the study was to investigate the extent to which maladaptive cognitive emotion regulation strategies mediate the relationship between social anxiety, problematic social networking sites, and smartphone use. The direct effect between social anxiety and problematic social anxiety use was also significant.

The study shows that emotion regulation is a key factor in developing problematic social networking anxiety. Further, the study argues that a smartphone could serve as an external tool for emotion regulation, which could, in turn, lead to problematic social networking anxiety.

EMOTIONAL REGULATION: The term emotional regulation proposed by Gross (2002) emphasizes that people can act to control their emotions at different points in time including before they feel an emotion ("antecedent-focused emotion regulation).

Emotional regulation refers to an individual's ability to manage and control their emotions effectively. This includes strategies for dealing with stress, anger, or other negative emotions. Effective emotional regulation is expected to be associated with better psychological well-being.

Emotional regulation belongs to the broader set of emotion regulation processes, which includes both the regulation of one's own feelings and the regulation of other people's feelings. Emotional regulation is a complex process that involves initiating, inhibiting, or modulating one's state or behaviour in a given situation.

For example, subjective experience (feelings), cognitive responses (thoughts), emotion-related physiological responses (heart rate and hormonal activity), and emotion-related behaviour (bodily actions or expression). Emotional regulation is generally described as the ability of an individual not only to manage emotions effectively but also to respond effectively to the emotional experience.

Verzeletti et al. (2016) examined the role of emotion regulation strategies and psychosocial well-being in adolescence. The findings overall show that adolescents' well-being is related to preferred emotional regulation strategies, mirroring associations found in the adult population.

Hoffner et al. (2015) examined the role of mobile phone use, emotion regulation, and well-being. The study examined the use of mobile phones to regulate negative emotions, considering both the role of different aspects of phone use and individual differences in emotion regulation strategies. This study demonstrates that mobile phones can yield psychological benefits, depending on how they are used. Findings suggest that using the phone for social support is most likely to lead to effective remediation of negative emotions.

Hollett et al. (2020) examined the role of dimensions of emotion dysregulation associated with problem video gaming. The purpose of the study was to determine whether dimensions of emotion regulation were associated with problem video gaming in a sample of self-reported video gamers from the general English-speaking adult population. The findings suggest that some dimensions of emotion dysregulation may be related to problem video gaming.

Wu et al. (2022) examined the relationship between physical activity and emotional regulation strategies in early adulthood. The findings indicate that although the negative correlation between physical activity and emotional strategies was not significant, the positive correlation between physical activity and cognitive reappraisal was significant, and right hemisphere rostral anterior cingulate cortex thickness played a partial mediating role in the relationship between physical activity and cognitive reappraisal.

PSYCHOLOGICAL WELL-BEING The term psychological well-being was developed by the Ryff to address an omission in the formulation of positive human functioning that prevailed in the 1980s.Psychological well -being encompasses an individual's overall mental health and encompasses factors like life satisfaction, positive emotions, and a sense of purpose. High psychological well-being indicates a state of good mental health and overall life satisfaction. These things are difficult to assess objectively; therefore, the emphasis is on the term “subjective” well-being. It may be well maintained in adverse circumstances, and conversely, it may be lost in favourable situations. It is related to, but not dependent upon, the physical and psychological condition. The term psychological well-being includes satisfaction, efficiency, sociability, mental health, and interpersonal relations.

A research study conducted by **Chen et al. (2002)** examined the role of Internet use among young and older adults in relation to psychological well-being. To study the negative impact of Internet use on the

psychological well-being of young adults and examine age differences in psychological well-being; to study the impact of Internet use on the psychological well-being of young and older adults; and to explore group differences between older Internet users and nonusers of psychological well-being and personal characteristics. The finding conflicted with the emerging literature on Internet use among older adults, which usually suggested positive effects.

Hamer et al. (2010) examined the role of television- and screen-based activity and mental well-being in adults. The aim of the study was to examine the association between recreational sedentary behaviour (based on television and screen-based entertainment time) and mental health in a representative sample of adults. In stratified analyses, the association between television- and screen-based entertainment time and the General Health Questionnaire-12 score persisted across all physical activity levels. Sedentary behaviour in leisure time is independently associated with poorer mental health scores in a representative population sample.

Straatmann et al. (2016) examined the role of changes in physical activity and screen time related to psychological well-being in early adolescence. Psychological well-being influences health behaviours differently in adolescent boys and girls. The experimenter evaluated the role of psychological well-being in early adolescence in the onset and persistence of insufficient physical activity and exceeding recommended screen time, depending on gender. Gender differences are important because poor psychological well-being seems to affect sedentary behaviour in girls more than in boys and predicts insufficient activity among boys. **Oswald et al. (2020**) examined the psychological impacts of "screen time" and "green time" for children and adolescents. The aim of the systematic scoping review was to collate evidence assessing associations between screen time, green time, and psychological outcomes (including mental health, cognitive functioning, and academic achievement) for young children (<5 years), schoolchildren (5–11 years), early adolescents (12–14 years), and older adolescents (15–18 years). However, green time could suffer the consequences of high screen time; therefore, nature may be an underutilized public health resource for youth psychological well-being in a high-tech era.

JUSTIFICATION OF THE STUDY: Studying the relationship between green time, screen time, and emotional regulation as predictors of psychological well-being among university students is particularly relevant and important for several reasons. University is a significant life transition for many students,

often marked by increased academic demands, social challenges, and independence. This transition can lead to heightened stress and mental health concerns. Understanding the factors that influence psychological well-being during this critical period is essential. University students experience substantial academic pressures, including exams, assignments, and the need to maintain high grades. Excessive screen time, often due to academic work or recreational activities, may contribute to stress and mental fatigue. Investigating the relation of screen time on psychological well-being in this context is crucial. University campuses vary in their access to natural green spaces. Some students may have limited exposure to green environments due to urban campus settings or busy schedules. Assessing how green time or lack thereof affects well-being can inform strategies to promote students' access to nature. University life can be emotionally demanding, with students navigating various stressors such as homesickness, social pressures, and academic setbacks. Effective emotional regulation is a critical skill for coping with these challenges. Researching how emotional regulation relates to well-being can help identify areas for support and skill development. As well students often make lifestyle choices that can affect their mental health, including leisure activities and technology use. Analysing the choices related to green time and screen time allows for a better understanding of how these behaviours influence well-being.

Universities can use this information to implement programs, policies, and resources that support students in managing their well-being effectively. Finding an activity, one can enjoy it as well as which can enhance green time and emotions and enhance the psychological well-being which steps have to take, and which factors contribute it.

All these factors need to be explored specifically for the education sector that has a tough job of reaching out to the students at large. So, to explore the contribution of screen time, green time and emotional regulation in determination of psychological well-being is the aim of the current study.

CONCEPTUAL FRAMEWORK

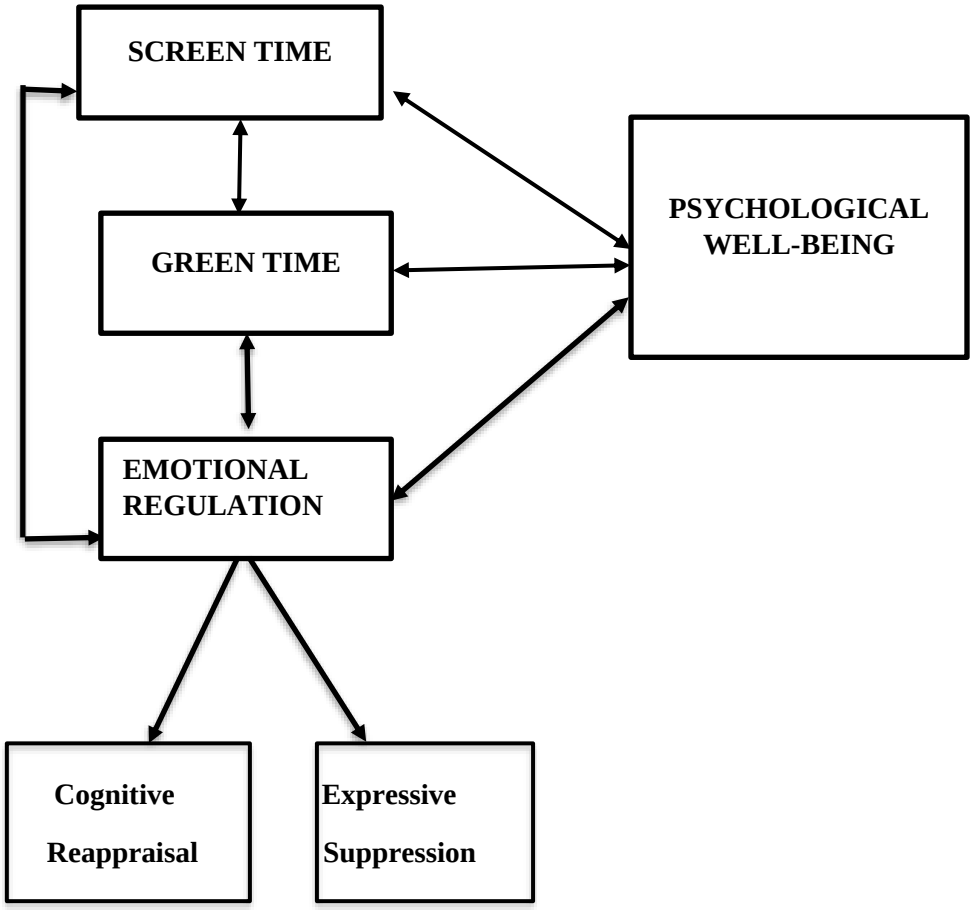

Figure 1: Conceptual framework is showing the contribution of Screen time, green time and Emotional regulation (cognitive reappraisal and Expressive suppression) on psychological well-being and also showing the interconnection among the predictors.

RESEARCH GAP AND FUTURE DIRECTION: Review of research literature on green time and screen time reveals that most of the studies in their area have been conducted to examine the impact of these variables on physical activities, emotional regulation and psychological well-being among children and early adolescent.

But still there is the need to study the relative contribution of green time, screen time and emotional regulation on psychological well-being of university students as there are only a limited studies have been conducted on this group.

RESEARCH METHOD

OBJECTIVES OF THE STUDY

- To study the relationship of screen time, green time and emotional regulation (Cognitive

reappraisal and Expressive suppression) with psychological well-being among university students.

- To study the relationship of screen time with green time and emotional regulation (Cognitive reappraisal and Expressive suppression) among university students.
- To study the relationship between emotional regulation (Cognitive reappraisal and Expressive suppression) and green time among university students.
- To find out the relative contribution of screen time, green time and emotional regulation (Cognitive reappraisal and Expressive suppression) in determination of psychological well-being among university students.

HYPOTHSES OF THE STUDY

- Psychological well-being would be positively related with green time and Cognitive reappraisal and negatively related Expressive suppression and screen time among university students.
- Screen time would be negatively related with green time and cognitive reappraisal and positively related with Expressive suppression among university students.
- Green time would be positively related with cognitive reappraisal and negatively related with expressive regulation.
- Relative contribution of green time would be much remarkable as compared to screen time and emotional regulation (cognitive reappraisal and expressive suppression) towards psychological well-being among university students.

VARIABLES

PREDICTOR VARIABLES

- Screen time
- Green time
- Emotional Regulation (cognitive reappraisal and expressive suppression)

CRITERION VARIABLE

- Psychological well-being

CONTROL VARIABLES

1. Age 18 to 25 years. (University is a significant life transition for many students, often marked by increased academic demands, social challenges, and independence. This transition can lead to heightened stress and mental health concerns. Understanding the factors that influence psychological well-being during this critical period is essential. Therefore, the age group of 18 to 25 has been selected).
2. Subjects having any mental and psychological problems will be excluded of the sample. (On the basis of the reports of the teachers of those students their general mental and physiological problems will be taken into consideration. The students reported by the teachers as suffering from the problem will be excluded).
3. Male and female both will be included as a sample.
4. Socioeconomic status: The students of Middle and high socioeconomic status will be included and low socioeconomic status will be excluded. (Families with lower socio-economic status may have limited access to smartphones, computers, and other electronic devices, reducing screen time and green time could be a more accessible and affordable form of recreation, leading to increased engagement with natural environments. Communities common in lower socio-economic areas may provide strong social support, contributing to emotional regulation and psychological well-being

OPERATIONAL DEFINITION

Screen Time (**ST):** is defined as time spent engaging with visual screen-based technologies (including televisions, computers, laptops, video games, smart phones, tablets, and handled electronic or gaming devices).

Green Time (GT): as exposure to or time spent in nature (including surrounding greenery, access to and use of green spaces like parks, nature-based activities such as gardening, and nature-based educational contexts such as greened schoolyards).

Emotional Regulation (ER): Emotional regulation can be defined as one's attempts to monitor and modulate their emotional experience (Gross and Thompson, 2003). Emotional regulation strategies can be divided into two categories: cognitive reappraisal and expressive suppression.

Cognitive reappraisal: Cognitive reappraisal involves changing the meaning of emotional events so

that they alter emotional experience (Gross &John, 2003).

Expressive suppression: Expressive suppression is an emotion regulation strategy that consists of top-down, conscious control of reflexive behavioural expression of emotion. (Gross & John, 2003).

Psychological Well-Being (PWB): The term psychological well-being (PWB) connotes a wide range of meanings, usually associated with wellness. Most studies in the past defined wellness " as not sick, as an absence of anxiety, depression, or other forms of mental problems." The PWB includes meaning in life, absence of somatic symptoms, self-esteem, positive effects, daily activities, satisfaction, absence of suicidal ideas, personal control, social support, absence of tension, and general efficiency (Bhogle & Prakash, 1995).

SAMPLE

This study would be conducted by stratified random sampling of around 600 respondents would be selected from various universities (Dayalbagh educational institute, Dr. Bhimrao Ambedkar university, RBS college and ST. Jhon's college) of Agra city. The sample Consisted of 600 university students whose age range from 18 to 25 years.

RESEARCH DESIGN: In present research a correlational design would be used to study the relationship between screen time, green time, emotional regulation and psychological well-being among university students.

TOOLS:

- **Psychological well-being scale:** Psychological well-being scale developed by Sisodia and Choudhary (2012) will be used to measure psychological well-being among the participants. It contains 50 items measuring five dimensions (subscales) of well-being i.e., life satisfaction, efficiency, sociability, mental health, and interpersonal relations. Each subscales have 10 items, each item with the five -point response category ranging from strongly agree to strongly disagree. High score indicates high psychological well-being. the internal consistency reliability coefficient reported to be .90 and the test-retest reliability reported was .87 for the normative sample. The validity coefficient obtained was 0.94.
- **Emotional Regulation:** Emotional regulation scale developed by Gross and John (2003). The emotional regulation questionnaire was designed to assess individual difference in the habitual

use of two emotional regulation strategies: Cognitive reappraisal and Expressive Suppression. The questionnaire contains 10 items rated on a scale from 1 (strongly disagree) to 5 (strongly agree). The first factor was defined by the reappraisal items and the second factor was defined by the suppression items. Alpha reliabilities averaged .79 for Reappraisal and .73 for suppression. Test- retest reliability across 3 months was .69 for both scales.

- **Screen Time Questionnaire:** The questionnaire would be constructed and standardized by the researcher. (Reliability - Cronbach alpha for reliability and Validity - content validity)
- **Green Time Questionnaire:** The questionnaire would be constructed and standardized by the researcher. (Reliability - Cronbach alpha for reliability and Validity - content validity).

STATISTICAL ANALYSIS: Data would be analysed by using stepwise Multiple Regression Analysis which estimate the relative contribution of significant predictor variables (Screen time, green time and emotional regulation) in the prediction of criterion variable (psychological well-being).

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